

WHAT IS CLAIMED IS:

1. A radio frequency power amplifier module comprising:
 - a first transistor to amplify a signal inputted through an input or inter-stage impedance matching circuit, and output a first amplified signal;
 - a second transistor to amplify the first amplified signal inputted through an output terminal of said first transistor, and output a second amplified signal;
 - a third transistor to drive the first transistor;
 - a first terminal to supply a driving voltage to an output terminal of said second transistor;
 - a first interconnection to couple said first terminal and the output terminal of said second transistor;
 - a second terminal to supply a driving voltage to an output terminal of said third transistor;
 - a second interconnection to couple said second terminal and the output terminal of said third transistor; and
 - a first ground part for electromagnetic shield provided between said first and second interconnections.
2. The radio frequency power amplifier module according to claim 1, further comprising:
 - a dielectric plate;
 - a second ground part for electromagnetic shield provided on a back side of said dielectric plate; and
 - a through hole, provided on said dielectric plate, for electrically connecting said first ground part and said second ground part,

wherein each of said first and second interconnections comprises a conductive layer mounted on a main front side of said dielectric plate, disposed to be at least partially opposite to each other, and

wherein said first ground part comprises a conductive layer provided in an area in which said first and second

interconnections are opposite to each other, not in contact with said first and second interconnections.

3. The radio frequency power amplifier module according to claim 2,
wherein said first ground part for electromagnetic shield has a width of 0.2 mm or more.
4. The radio frequency power amplifier module according to claim 1, further comprising:
 - a first dielectric layer having a first surface on which said first interconnection is formed;
 - a second dielectric layer having a first surface on which said second interconnection is formed;
 - a third dielectric layer having a first ground part for electromagnetic shield formed on a first surface thereof, disposed between said first and second dielectric layers;
 - a second ground part for electromagnetic shield provided on a second surface of said first dielectric layer; and
 - a through hole, provided on said first dielectric layer and said third dielectric layer, for electrically connecting said first ground part and said second ground part.
5. The radio frequency power amplifier module according to claim 1, further comprising:
 - a first dielectric layer having a first surface on which said second interconnection is formed;
 - a second dielectric layer having a first surface on which said first interconnection is formed;
 - a third dielectric layer having a first ground part for electromagnetic shield formed on a first surface thereof, disposed between said first and second dielectric layers;
 - a second ground part for electromagnetic shield provided on a second surface of said first dielectric layer; and

a through hole, provided on said first dielectric layer and said third dielectric layer, for electrically connecting said first ground part and said second ground part.

6. The radio frequency power amplifier module according to claim 1,

wherein at least one of said first, second, and third transistors is a heterojunction bipolar transistor of Gallium Arsenide, Silicon Germanium, or Indium Phosphide.

7. The radio frequency power amplifier module according to claim 2,

wherein at least one of said first, second, and third transistors is a heterojunction bipolar transistor of Gallium Arsenide, Silicon Germanium, or Indium Phosphide.

8. The radio frequency power amplifier module according to claim 4,

wherein at least one of said first, second, and third transistors is a heterojunction bipolar transistor of Gallium Arsenide, Silicon Germanium, or Indium Phosphide.

9. The radio frequency power amplifier module according to claim 5,

wherein at least one of said first, second, and third transistors is a heterojunction bipolar transistor of Gallium Arsenide, Silicon Germanium, or Indium Phosphide.

10. A radio frequency power amplifier module comprising: a first transistor to amplify a signal inputted through an input or inter-stage impedance matching circuit, and output a first amplified signal;

a second transistor to amplify the first amplified signal inputted through an output terminal of said first transistor, and output a second amplified signal;

a third transistor to drive the first transistor;

a first terminal to supply a driving voltage to an output terminal of said second transistor;

a first interconnection coupled to said first terminal;

a second interconnection to couple said first interconnection and the output terminal of said second transistor;

a second terminal to supply a driving voltage to an output terminal of said third transistor;

a third interconnection to couple said second terminal and the output terminal of said third transistor;

a first ground part for electromagnetic shield provided between said first and third interconnections; and

a second ground part for electromagnetic shield provided between said second and third interconnections.

11. The radio frequency power amplifier module according to claim 10, further comprising:

a dielectric plate;

a third ground part for electromagnetic shield provided on a back side of said dielectric plate;

a first through hole, provided on said dielectric plate, for electrically connecting said first ground part and said third ground part; and

a second through hole, provided on said dielectric plate, for electrically connecting said second ground part and said third ground part,

wherein each of said second and third interconnections comprises a conductive layer mounted on a main front side of said dielectric plate, disposed to be at least partially opposite to each other, and

wherein said second ground part comprises a conductive layer provided in an area in which said second and third interconnections are opposite to each other, not in contact with said second and third interconnections.

12. The radio frequency power amplifier module according to claim 11,
wherein said second ground part for electromagnetic shield has a width of 0.2 mm or more.
13. The radio frequency power amplifier module according to claim 10, further comprising:
 - a first dielectric layer having a first surface on which said first interconnection is formed;
 - a second dielectric layer having a first surface on which said second and third interconnections and said second ground part are formed, said second ground part being provided in an area in which said second and third interconnections are opposite to each other, not in contact with said second and third interconnections;
 - a third dielectric layer having a first ground part for electromagnetic shield formed on a first surface thereof, disposed between said first and second dielectric layers;
 - a third ground part for electromagnetic shield provided on a second surface of said first dielectric layer;
 - a first through hole, provided on said first dielectric layer and said third dielectric layer, for electrically connecting said first ground part and said third ground part; and
 - a second through hole, provided on said second dielectric layer, for electrically connecting said first ground part and said second ground part.
14. The radio frequency power amplifier module according to claim 10, further comprising:
 - a first dielectric layer having a first surface on which said first and third interconnections and said second ground part are formed, said second ground part being provided in an area in which said first and third interconnections are opposite to each other, not in contact with said first and third interconnections;

a second dielectric layer having a first surface on which said second interconnection is formed;

a third dielectric layer having a first ground part for electromagnetic shield formed on a first surface thereof, disposed between said first and second dielectric layers;

a third ground part for electromagnetic shield provided on a second surface of said first dielectric layer;

a first through hole, provided on said first dielectric layer, for electrically connecting said second ground part and said third ground part; and

a second through hole, provided on said third dielectric layer, for electrically connecting said first ground part and said second ground part.

15. The radio frequency power amplifier module according to claim 10,

wherein at least one of said first, second, and third transistors is a heterojunction bipolar transistor of Gallium Arsenide, Silicon Germanium, or Indium Phosphide.

16. The radio frequency power amplifier module according to claim 11,

wherein at least one of said first, second, and third transistors is a heterojunction bipolar transistor of Gallium Arsenide, Silicon Germanium, or Indium Phosphide.

17. The radio frequency power amplifier module according to claim 13,

wherein at least one of said first, second, and third transistors is a heterojunction bipolar transistor of Gallium Arsenide, Silicon Germanium, or Indium Phosphide.

18. The radio frequency power amplifier module according to claim 14,

wherein at least one of said first, second, and third transistors is a heterojunction bipolar transistor of Gallium Arsenide, Silicon Germanium, or Indium Phosphide.

19. The radio frequency power amplifier module according to claim 13, further comprising:

a third through hole, provided on said first dielectric layer, for electrically connecting said first terminal and said first interconnection;

a fourth through hole, provided on said second and third dielectric layers, for electrically connecting said first interconnection and said second interconnection; and

a fifth through hole, provided on said first, second, and third dielectric layers, for electrically connecting said second terminal and said third interconnection.

20. The radio frequency power amplifier module according to claim 19, further comprising:

a fourth ground part for electromagnetic shield provided between said first interconnection and said fifth through hole.

21. The radio frequency power amplifier module according to claim 14, further comprising:

a third through hole, provided on said first dielectric layer, for electrically connecting said first terminal and said first interconnection;

a fourth through hole, provided on said second and third dielectric layers, for electrically connecting said first interconnection and said second interconnection; and

a fifth through hole, provided on said first dielectric layer, for electrically connecting said second terminal and said third interconnection.